

Toxicology Information

BASF Corporation Chemicals Division

COMMON CHEMICAL NAME/TRADE NAME	PHYSICAL STATE	ODOR	BC PRODUCT NO.
Ethylene oxide	Clear Liquid	Sweet Solvent	588140
SYNONYM	MOLECULAR WEIGHT	ODOR THRESHOLD	CAS NO.
EO; 1,2-Epoxyethane	44.1	700 ppm	75-21-8
CHEMICAL FORMULA	FLASH POINT (°F.)	VAPOR PRESSURE	P.E.L.
C2-H4-O	-35	1095 mm @ 20C	1 ppm*

TOXIC PROPERTIES:

Eyes: Corrosive
Skin: Primary skin irritant

Inhalation: Irritant
Ingestion: Very toxic

Direct contact with this liquid can cause eye burns, and skin contact of only four minutes can cause a severe chemical burn. High vapor concentrations can cause central nervous system depression, pulmonary irritation, nausea, chemical pneumonitis, and possibly, pulmonary edema and death. Studies have shown that ethylene oxide is a mutagenic agent. At high levels, it caused adverse effects to reproductive organ systems in animals. A chronic inhalation study has shown that EO increases the incidence of cancer in experimental animals. The International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) list ethylene oxide as a carcinogenic chemical.

PERSONAL PROTECTION:

Wear goggles and face shield to protect eyes. Wear rubber gloves, coveralls, aprons, and boots as necessary to prevent any skin contact. Air-supplied respirators may be required. Refer to the EO standard for details of respirator selection.

FIRST AID:

Eyes: Flush thoroughly with running water for 15 minutes and get immediate medical attention.

Skin: Wash thoroughly with mild soap and water. Remove contaminated clothing and launder before reuse; discard leather articles. Get medical attention.

Inhalation: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

Ingestion: Get immediate medical attention.

US EPA RECORDS CENTER REGION 5



487398

SPECIAL PRECAUTIONS/CONSIDERATIONS:

Safety showers and eyewash fountains must be easily accessible. This material is extremely flammable with explosive vapors and an LEL-3% and UEL-100%. Use only non-sparking equipment and do not introduce any sources of heat, sparks, or flames. Violent polymerization can occur. Do not attempt to handle the material without proper instruction.

*Occupational exposure to ethylene oxide is regulated and enforced by OSHA as stated in 29 CFR 1910.1047.

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COMMON CHEMICAL NAME/TRADE NAME	PHYSICAL STATE	ODOR	BC PRODUCT NO.
Propylene oxide	Clear Liquid	Sweet Ether	588510
SYNONYM	MOLECULAR WEIGHT	ODOR THRESHOLD	CAS NO.
PO; 1,2-Epoxypropane; Propene oxide	58.08	200 ppm	75-56-9
CHEMICAL FORMULA	FLASH POINT (°F.)	VAPOR PRESSURE	P.E.L.
C3-H6-O	-35 (CC)	760mm Hg@ 93F	20 ppm *

TOXIC PROPERTIES:

Eyes: Corrosive

Skin: Primary skin irritant

Inhalation: Irritant

Ingestion: Very toxic

Contact with propylene oxide can cause severe eye burns and permanent damage. Prolonged skin contact leads to skin irritation and may result in burns. Inhalation of vapors causes respiratory irritation. Overexposure may result in depression of the central nervous system, intoxication, and liver and kidney injury. Animal studies indicate that PO is a mutagenic agent, and excessive exposure may adversely affect reproductive organs and reproductive capability. Propylene oxide was carcinogenic to rats at 30, 100, and 300 ppm in a lifetime inhalation study. In a National Toxicology Program inhalation study, PO was carcinogenic to rats and mice at 400 ppm. The International Agency for Research on Cancer (IARC) has included propylene oxide in Category 2A (probably carcinogenic to humans).

PERSONAL PROTECTION:

Wear chemical goggles and protective gloves and clothing when handling. If the P.E.L. is exceeded, wear an approved organic vapor or air-supplied respirator.

FIRST AID:

Eyes: Flush thoroughly with running water for 15 minutes and get medical attention.

Skin: Wash thoroughly with mild soap and water. Remove contaminated clothing and launder before reuse; discard contaminated leather articles. Get medical attention.

Inhalation: Move to fresh air. Aid in breathing, if necessary, and get medical attention.

Ingestion: Get immediate medical attention.

SPECIAL PRECAUTIONS/CONSIDERATIONS:

Safety showers and eyewash fountains should be easily accessible.

This material is an extremely flammable liquid; use only non-sparking equipment and keep away from sources of heat, sparks, or flames. Violent polymerization can occur. Do not attempt to handle the material without proper instruction.

ACGIH, OSHA (Final). 100 ppm OSHA (Trans).

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